

We claim:-

1. A process for the preparation of polyurethane foams having a  
5 density of less than 200 g/l, by reacting

- a) polyisocyanates with
- b) compounds having at least two hydrogen atoms reactive  
10 with isocyanate groups,

wherein the polyisocyanates a) are aromatic di- or  
15 polyisocyanates and the compounds b) having at least two  
hydrogen atoms reactive with isocyanate groups contain at  
least one acrylate polyol having a hydroxyl number between 15  
and 500 mg KOH/g, which can be prepared by copolymerization  
of hydroxyl-functionalized (meth)acrylates with ethene,  
propene, butene, isobutene, diisobutene, acrylonitrile,  
20 acrylamide, acrolein, styrene, methylstyrene, divinylbenzene,  
maleic anhydride, vinyl esters of carboxylic acids or  
unsaturated carboxylic acids, for example maleic acid,  
fumaric acid or crotonic acid or derivatives thereof, and at  
least one polyether alcohol or polyester alcohol.

25 2. A process as claimed in claim 1, wherein the acrylate polyols  
have an average molecular weight Mn of not more than  
12 000 g/mol.

3. A process as claimed in claim 1, wherein the acrylate polyols  
30 have an average molecular weight Mn of not more than  
8000 g/mol.

4. A process as claimed in claim 1, wherein the acrylate polyols  
have an average molecular weight Mn of not more than  
35 6000 g/mol.

5. A process as claimed in claim 1, wherein the acrylate polyols  
are prepared by polymerization of hydroxyl-functionalized  
40 (meth)acrylates.

6. A process as claimed in claim 1, wherein the acrylate polyols  
are prepared by copolymerization of hydroxyl-functionalized  
45 (meth)acrylates with monomers containing olefinic double  
bonds and no hydroxyl functional groups.

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7. A process as claimed in claim 1, wherein the acrylate polyols are prepared by copolymerization of hydroxyl-functionalized (meth)acrylates with (meth)acrylates having no hydroxyl functional groups.
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8. A process as claimed in claim 1, wherein the acrylate polyols are prepared by polymerization of C<sub>1</sub>- to C<sub>8</sub>-hydroxyalkyl (meth)acrylates.
- 10 9. A process as claimed in claim 1, wherein the acrylate polyols are prepared by copolymerization of C<sub>1</sub>- to C<sub>8</sub>-hydroxyalkyl (meth)acrylates with alkyl (meth)acrylates having C<sub>1</sub>- to C<sub>10</sub>-alkyl groups.
- 15 10. A process as claimed in claim 1, wherein acrylate polyols are used in an amount of from 0.1 to 50 parts by weight, based on 100 parts by weight of the compounds b) having at least two hydrogen atoms reactive with isocyanate groups.
- 20 11. A process as claimed in claim 1, wherein acrylate polyols are used in an amount of from 0.5 to 40 parts by weight, based on 100 parts by weight of the compounds b) having at least two hydrogen atoms reactive with isocyanate groups.
- 25 12. A process as claimed in claim 1, wherein the acrylate polyols are used in an amount of from 1 to 30 parts by weight, based on 100 parts by weight of the compounds b) having at least two hydrogen atoms reactive with isocyanate groups.
- 30 13. A process as claimed in claim 1, wherein the polyisocyanates a) used are tolylene diisocyanate, diphenylmethane diisocyanate, polyphenylpolymethylene polyisocyanate, phenylene diisocyanate, xylylene diisocyanate, naphthylene diisocyanate, tolidine diisocyanate or a mixture of said isocyanates.
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45 14. A process as claimed in claim 1, wherein the polyisocyanates a) were modified by incorporation of urethane, allophanate, urea, biuret, uretdione, amide, isocyanurate, carbodiimide, uretonimine, oxadiazinetrione or iminoxadiazinedione structures.
15. A process as claimed in claim 1, wherein the polyisocyanates a) were modified by incorporation of urethane, allophanate, uretdione, carbodiimide, uretonimine, biuret or isocyanurate structures.

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16. A polyurethane foam which can be prepared as claimed in any of claims 1 to 15.
17. A polyol blend for the preparation of polyurethane foams,  
5 comprising at least one acrylate polyol and at least one polyetheralcohol or polyesteralcohol.

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## Preparation of polyurethane foams

## Abstract

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Polyurethane foams having a density of less than 200 g/l are prepared by reacting

a) polyisocyanates with

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b) compounds having at least two hydrogen atoms reactive with isocyanate groups,

the polyisocyanates a) being aromatic di- or polyisocyanates and  
15 the compounds b) having at least two hydrogen atoms reactive with isocyanate groups containing at least one acrylate polyol.

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